

## ABSTRACT

The present invention provides a method for eliminating phosphate groups of peptides that relies not on enzymes but on a chemical treatment, and an effective method for peptide analysis that uses such a method. A method for eliminating a phosphate group of a peptide, the method comprising the use of a reagent containing at least one selected from the group consisting of hydrogen fluoride, hydrofluoric acid, and a hydrogen fluoride-containing compound, and a method for peptide analysis that uses such a method. As the hydrogen fluoride-containing compound, hydrogen fluoride-pyridine is preferably used. The elimination of the phosphate group from a peptide may be carried out so that the total amount of the hydrogen fluoride, hydrogen fluoride in the hydrofluoric acid, and hydrogen fluoride in the hydrogen fluoride-containing compound contain in the reagent is 10 to 100wt% with respect to the reagent, and the temperature for the elimination reaction is -10 to 50°C. Further, the peptide analysis may be performed by mass spectrometry with the use of MALDI-TOFMS.